

What is claimed is:

1. A payload assembly adapted to be secured to a support structure having a plurality of elongated, spaced apart supports, comprising:

5 a payload member adapted to be positioned proximate the support structure;

at least one payload support coupled to the payload member and adapted to operatively engage at least one of the elongated supports of the support structure, the at least one payload support being adapted to beam loads from the payload member to the at least one elongated support, the at least one payload support further being adapted to be
10 disengagable from the at least one elongated support and moveable with the payload member relative to the support structure.

2. The payload assembly of Claim 1, wherein the at least one payload support includes an end portion that is adapted to engage with a top surface of the at least one
15 elongated support.

3. The payload assembly of Claim 2, wherein the end portion includes a plate member that is adapted to project over the top surface of the at least one elongated support.

20 4. The payload assembly of Claim 1, wherein the at least one payload support is adapted to span between an adjacent pair of elongated supports, the at least one payload support having first and second end portions that are adapted to engage with an associated top surface of each of the adjacent pair of elongated supports.

25 5. The payload assembly of Claim 1, wherein the payload member includes a primary payload component coupled to the at least one payload support, the primary payload component including at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, a shelf, and an article of furniture.

6. The payload assembly of Claim 1, wherein the payload member includes a payload panel coupled to the at least one payload support.

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7. The payload assembly of Claim 6, wherein the payload panel includes at least one recess disposed within a peripheral edge thereof, the at least one payload support having an upper portion that is fittingly engaged into the at least one recess.

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8. The payload assembly of Claim 6, wherein the at least one payload support is coupled to a lower surface of the payload panel, the at least one payload support including at least one of a substantially flat stiffener, an "I" beam member, a "top hat"-shaped beam member, a "J" beam member, a "C"-shaped beam member, and a "box" beam member.

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9. The payload assembly of Claim 6, wherein the payload panel comprises at least one of a metal panel, a composite panel, a sandwich panel, and a laminate panel.

10. The payload assembly of Claim 6, wherein the at least one payload support is integrally-formed with the payload panel.

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11. The payload assembly of Claim 6, wherein the at least one payload support includes a framework having one or more longitudinal members and one or more transverse members, the framework being coupled to a lower surface of the payload panel.

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12. The payload assembly of Claim 6, wherein the payload member further includes a primary payload component coupled to the payload panel, the primary payload component including at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, and an article of furniture.

13. The payload assembly of Claim 6, wherein the payload member further includes at least one payload monument coupled to payload panel.

14. The payload assembly of Claim 13, wherein the at least one payload monument includes a framework having one or more longitudinal members and one or more transverse members, the framework being coupled to an upper surface of the payload panel.

15. The payload assembly of Claim 13, wherein the payload member further includes a primary payload component coupled to the at least one payload monument.

16. The payload assembly of Claim 1, wherein the support structure comprises a floor assembly of a passenger cabin of an aircraft.

17. An assembly, comprising:
a support structure;
a floor assembly including a plurality of elongated engagement members coupled to the support structure, the engagement members being spaced apart and approximately parallel, each engagement member including an engagement surface; and

a payload assembly including:

a payload member positioned proximate the floor assembly;
at least one payload support coupled to the payload member and operatively coupled to at least one of the engagement members, the at least one payload support being adapted to beam loads from the payload member to the at least one engagement member, the at least one payload support being further adapted to be decoupled from the at least one engagement member and moveable with the payload member relative to the floor assembly.

18. The assembly of Claim 17, wherein the at least one payload support includes an end portion operatively coupled to a top surface of the at least one engagement member.

19. The assembly of Claim 18, wherein the end portion includes a plate member projecting over the top surface of the at least one engagement member and operatively coupled thereto.

20. The assembly of Claim 17, wherein the at least one payload support is adapted to span between an adjacent pair of engagement members, the at least one payload support having first and second end portions that are operatively coupled to an associated top surface of each of the adjacent pair of engagement members.

21. The assembly of Claim 17, wherein the payload member includes a primary payload component coupled to the at least one payload support, the primary payload component including at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, a shelf, and an article of furniture.

22. The assembly of Claim 17, wherein the payload member includes a payload panel coupled to the at least one payload support.

23. The assembly of Claim 22, wherein the payload panel includes at least one recess disposed within a peripheral edge thereof, the at least one payload support having an upper portion that is fittingly engaged into the at least one recess.

24. The assembly of Claim 22, wherein the at least one payload support is integrally-formed with the payload panel.

25. The assembly of Claim 22, wherein the at least one payload support includes a framework having one or more longitudinal members and one or more transverse members, the framework being coupled to a lower surface of the payload panel.

26. The assembly of Claim 22, wherein the payload member further includes a primary payload component coupled to the payload panel, the primary payload component including at least one of a galley, a lavatory, a passenger seat, a cargo container, a section partition, a fireplace, and an article of furniture.

27. The assembly of Claim 22, wherein the payload member further includes at least one payload monument coupled to payload panel.

28. The assembly of Claim 27, wherein the at least one payload monument includes a framework having one or more longitudinal members and one or more transverse members, the framework being coupled to an upper surface of the payload panel.

29. The assembly of Claim 17, wherein the support structure comprises an airframe of an aircraft, and wherein the payload member comprises at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, a shelf, and an article of furniture.

30. An aircraft, comprising:
a fuselage operatively coupled to an airframe;
a propulsion system operatively coupled to the airframe;
a floor assembly disposed within the fuselage and coupled to the airframe, the floor assembly including a plurality of elongated engagement members coupled to the airframe, the engagement members being spaced apart and approximately parallel, each engagement member including an engagement surface; and

a payload assembly including

a payload member positioned proximate the floor assembly;

at least one payload support coupled to the payload member and operatively coupled to at least one of the engagement members, the at least one payload support being adapted to beam loads from the payload member to the at least one engagement member, the at least one payload support being further adapted to be decoupled from the at least one engagement member and moveable with the payload member relative to the floor assembly.

31. The aircraft of Claim 30, wherein the at least one payload support includes an end portion operatively coupled to a top surface of the at least one engagement member.

32. The aircraft of Claim 30, wherein the at least one payload support is adapted to span between an adjacent pair of engagement members, the at least one payload support having first and second end portions that are operatively coupled to an associated top surface of each of the adjacent pair of engagement members.

33. The aircraft of Claim 30, wherein the payload member includes a primary payload component coupled to the at least one payload support, the primary payload component including at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, a shelf, and an article of furniture.

34. The aircraft of Claim 30, wherein the payload member includes a payload panel coupled to the at least one payload support.

35. The aircraft of Claim 34, wherein the payload panel includes at least one recess disposed within a peripheral edge thereof, the at least one payload support having an upper portion that is fittingly engaged into the at least one recess.

36. The aircraft of Claim 34, wherein the at least one payload support includes a framework having one or more longitudinal members and one or more transverse members, the framework being coupled to a lower surface of the payload panel.

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37. The aircraft of Claim 34, wherein the payload member further includes a primary payload component coupled to the payload panel, the primary payload component including at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, and an article of furniture.

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38. The aircraft of Claim 34, wherein the payload member further includes at least one payload monument coupled to payload panel.

39. The aircraft of Claim 34, wherein the at least one payload monument includes
15 a framework having one or more longitudinal members and one or more transverse members, the framework being coupled to an upper surface of the payload panel.

40. A method of securing a payload to a support structure, comprising:
coupling a plurality of elongated engagement members of a floor assembly to the
20 support structure, the engagement members being spaced apart and approximately parallel, each engagement member including an engagement surface; and

providing a payload assembly including a payload member and a payload support coupled to the payload member;

removably coupling the payload support with an upper surface of at least one of the
25 engagement members; and

at least partially transmitting loads from the payload member through the payload support to the at least one engagement member.

41. The method of Claim 40, wherein providing a payload assembly including a payload member comprises providing a payload assembly having at least one of a galley, a lavatory, a passenger seat, a cargo container, a section partition, a fireplace, a shelf, and an article of furniture.

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42. The method of Claim 40, wherein providing a payload assembly including a payload support comprises providing a payload assembly having a payload support that includes an end portion operatively coupled to a top surface of the at least one engagement member.

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43. The method of Claim 40, wherein providing a payload assembly including a payload support comprises providing a payload assembly having a payload support that spans between an adjacent pair of engagement members, the at least one payload support having first and second end portions that are operatively coupled to an associated top surface of each of the adjacent pair of engagement members.

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44. The method of Claim 40, wherein providing a payload assembly comprises providing a payload assembly having a primary payload component operatively coupled to the at least one payload support, the primary payload component including at least one of a galley, a lavatory, a passenger seat, an attendant seat, a cargo container, a section partition, a fireplace, a shelf, and an article of furniture.

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45. The method of Claim 40, wherein providing a payload assembly comprises providing a payload assembly having a payload panel operatively coupled to the at least one payload support.

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46. The method of Claim 45, wherein providing a payload assembly having a payload panel comprised providing a payload assembly having at least one recess disposed


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within a peripheral edge of the payload panel, the at least one payload support having an upper portion that is operatively fittingly engaged into the at least one recess.

5 47. The method of Claim 45, wherein providing a payload assembly including a payload support comprises providing a payload assembly having a framework including one or more longitudinal members and one or more transverse members, the framework being operatively coupled to a lower surface of the payload panel.

10 48. The method of Claim 45, wherein providing a payload assembly further comprises providing a payload assembly having a framework having one or more longitudinal members and one or more transverse members, the framework being operatively coupled to an upper surface of the payload panel.